

## REMARKS

Claims 1-10, 15-18, and 21 are pending in the application. Claims 1 and 7 are independent. Claims 1 and 7 have been amended. Figure 1 has been amended. It is believed that these changes introduce no new matter and their entry is respectfully requested.

### Drawings

The Examiner noted that the requested drawing change from the previous Office Action had not been received. Applicants have included the Drawing Amendments in the present Response as a Replacement Sheet.

### Rejection of Claims 7-30 Under 35 U.S.C. §103(a)

In paragraph 4 of the Office Action, the Examiner rejected claims 7-10 and 15-18 under 35 U.S.C. §103(a) as unpatentable over U.S. Patent No. 6,549,688 to Bazylenko (hereinafter “Bazylenko I”) and in further view of U.S. Patent Publication No. 2003/0044153 to Bazylenko (hereinafter “Bazylenko II”). To establish a *prima facie* case of obviousness, an Examiner must show three things: (1) that there is some suggestion or motivation to modify a reference or combine reference teachings to arrive at the claimed invention, (2) that there must be a reasonable expectation of success, and (3) that the references teach or suggest each and every element of the claimed invention. (MPEP §2143.) Applicants respectfully traverse the rejection.

Amended claim 7 recites in pertinent part “an integrated optical circuit having: a set of optical amplifiers formed in the integrated optical circuit, an individual optical amplifier being *a silica-based optical amplifier having a silica-based core*; an arrayed waveguide grating (AWG) formed in the integrated optical circuit and coupled to the set of optical amplifiers, and a set of waveguide elements coupled to outputs of the set of optical amplifiers, the AWG having a star coupler coupled to the waveguide elements.” Support for these changes can be found in Applicants’ Specification at page 10, lines 7-25, and in Figures 6 and 7.

Applicants respectfully submit that Bazylenko I could not be modified to arrive at the claimed invention with any reasonable expectation of success. Bazylenko I appears to be attempting to implement the amplifying capabilities of erbium-doped optical fiber amplifiers in a planar waveguide on a single substrate (col. 1, lines 13-26). The problem addressed in Bazylenko I is that they cannot implement the amplifying capabilities of erbium-doped optical fiber amplifiers using silica-based amplifiers. The solution proposed is to implement the amplifying capabilities of erbium-doped optical fiber amplifiers using ***metal-oxide-based optical amplifiers*** (col. 2, lines 1-3). As such, Bazylenko I asserts that there is no reasonable expectation of success in implementing the amplifying capabilities of erbium-doped optical fiber amplifiers using silica-based amplifiers. Applicants therefore respectfully submit that Bazylenko I does not meet the requirements of MPEP §2143.

Bazylenko II fails to make up for the deficiency. Bazylenko II does not even mention optical amplifiers. As such, Applicants respectfully submit that the Examiner has not made out a *prima facie* case of obviousness of claim 7 and that claim 7 is thus patentable over Bazylenko I in further view of Bazylenko II. Claims 8-10 and 15-18 properly depend from claim 7 and thus are patentable over Bazylenko I in further view of Bazylenko II as well. Accordingly, Applicants respectfully reconsider and remove the rejections of claims 7-10 and 15-18.

#### Rejection of Claims 1-6 and 21 Under 35 U.S.C. § 103(a)

In paragraph 5 of the Office Action, the Examiner rejected claims 1-6 and 21 under 35 U.S.C. § 103(a) as being unpatentable over Bazylenko I in view of Bazylenko II in further view of common knowledge in the art. Applicants respectfully traverse the rejections.

Amended claim 1 recites in pertinent part “a set of transceivers to couple a set of optical channels; and an integrated optical circuit coupled to receive the set of optical channels from the set of transceivers, the integrated optical circuit having: a set of optical amplifiers formed in the integrated optical circuit, ***an individual optical amplifier being a silica-based optical amplifier***; an arrayed waveguide gratings (AWG) formed in the integrated optical circuit and coupled to the set of optical amplifiers; and a set of waveguide

elements coupled to outputs of the set of optical amplifiers, the AWG having a star coupler coupled to the waveguide elements”. Support for these changes can be found in Applicants’ Specification at page 10, lines 7-25, and in Figures 6 and 7.

As discussed above, Applicants respectfully submit that Bazylenko I could not be modified to arrive at the claimed invention with any reasonable expectation of success and Bazylenko II fails to make up for the deficiency because it does not contemplate optical amplifiers. As such, Applicants respectfully submit that claim 1 is patentable for at least the same reasons that claim 7 is patentable. Claims 2-6 properly depend from claim 1 and claim 21 properly depends from claim 7 and thus is patentable over Bazylenko I in view of Bazylenko II and in further view of common knowledge as well. Accordingly, Applicants respectfully reconsider and remove the rejections of claims 1-6 and 21.

Rejection of Claim 21 Under 35 U.S.C. § 103(a)

In paragraph 6 of the Office Action, the Examiner rejected claim 21 under 35 U.S.C. § 103(a) as being unpatentable over Bazylenko as applied to claim 19 above and in further view of U.S. Patent No. 6,137,939 to Henry et al. (hereinafter “Henry”). Applicants respectfully traverse the rejections.

Applicants respectfully remind the Examiner that claim 19 was canceled in a previous paper. Additionally, claim 21 properly depends from patentable claim 7 and is thus is patentable for at least the same reasons that claim 7 is patentable.

## CONCLUSION

Applicants submit that all grounds for objection and rejection have been properly accommodated or traversed, and that the application is in condition for allowance. The Examiner is invited to telephone the undersigned representative if the Examiner believes that an interview might be useful for any reason.

Respectfully submitted,  
BLAKELY, SOKOLOFF, TAYLOR & ZAFMAN

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